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Migration, multiple sexual partnerships, and sexual concurrency in the Garífuna population of Honduras

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Abstract

The Garífuna, an ethnic minority group in Honduras, have been disproportionately affected by HIV. Previous research suggests that migration and high rates of multiple sexual partnerships are major drivers of the epidemic. Using data from a 2012 population-based survey, we assessed whether temporary migration was associated with 1) multiple sexual partnerships and 2) sexual concurrency among Garífuna men and women in Honduras. Among both men and women, temporary migration in the last year was associated with an increased likelihood of multiple sexual partnerships and with concurrency, though only the association between migration and multiple sexual partnerships among men was statistically significant (Adjusted Prevalence Ratio 1.7, 95% CI 1.2-2.4). Migration may contribute to HIV/STI vulnerability among Garífuna men and women via increases in these sexual risk behaviors. Research conducted among men and women at elevated risk of HIV should continue to incorporate measures of mobility, including history of internal migration.

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Introduction

Within Latin America, Honduras has historically been one of the countries most severely affected by HIV. Recent estimates place the national prevalence at 0.5% (1), indicating a decline from estimates of 1-2% in the 1990s (2) when nearly half of all reported AIDS cases in Central America came from Honduras (3). While a multitude of factors contributed to the initial spread of HIV in Honduras, epidemiologists attribute it in part to the increased presence of foreign military forces in the 1980s and the corresponding surge in commercial sex work (3,4). Late diagnoses and limited antiretroviral coverage amplify opportunities for secondary transmission; in 2013, 71% of cases were diagnosed with an initial CD4+ count of <200/μL and only 49% of persons needing antiretroviral therapy were receiving it (5). Over 90% of HIV infections in Honduras are attributed to heterosexual transmission (6), with women accounting for a greater proportion of new infections (6,7).

In Honduras, the Garífuna, an Afro-indigenous ethnic minority group, have been identified as a priority population for HIV prevention and control efforts due to their historically high rates of infection (6,8). In 2006, the HIV prevalence among a representative sample of Garífuna adults was estimated at 3.8% among men and 5.1% among women, which was over three times the national average at the time (9), and comparable to the reported prevalence among female sex workers (10,11). In the 2006 sample, over 50% of Garífuna individuals tested positive for HSV-2 (9), and over 20% were diagnosed with a nonviral sexually transmitted infection (STI).

The introduction and perpetuation of HIV transmission among the Honduran Garífuna has been attributed to high rates of mobility within this population (12–14). Migration has played a central part in the founding, dispersion, and fragmentation of the Garífuna people (15–19). Large and longstanding Garífuna diasporas exist in Belize, Nicaragua, Guatemala, and within several cities in the United States including New York, New Orleans, and Los Angeles (16–18,20,21). Short-term mobility of the Garífuna within Honduras is also common (8,13,22). While both women and men migrate, men are more likely to migrate and to migrate for longer duration, often taking jobs in the agricultural or fishing industries, at tourist destinations such as the Bay Islands, or in urban areas that offer superior training and employment opportunities compared to those available within traditional Garífuna communities (12,13,16–18,20). Qualitative research underscores that Garífuna men and women perceive migration to be a central factor contributing to the influx of HIV into their communities; men are believed to acquire partners while away, increasing their risk of HIV, and some then return home infected and may transmit the virus to new or existing partners through unprotected sex (9,12–14,21).

Numerous studies show that temporary migration can alter existing sexual partnerships, and provide mobile individuals opportunities to acquire new partners. Migrants physically separated from their usual social norms and networks may experience social isolation (23–25) and feel emotionally distanced from partners at home (24,26), which can result in the uptake of substance use and other HIV-related risk behaviors that increase the probability of unprotected sex and exposure to HIV (24,25,27–30). Whether they remain home or migrate to different destinations, partners of migrants may also engage in other sexual relationships

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during periods of separation (12,13,31–34). If remittances from migrant partners are delayed or insufficient, women may exchange sex for money in order to cover individual or familial expenses (13,31,33).

Such patterns of migration facilitate sexual concurrency (overlapping sexual partnerships), as migrants and their partners may initiate new partnerships while separated and resume relations during periods of reunification (23,34–37). Prior research has underscored the importance of sexual concurrency in the transmission of sexually transmitted infections including HIV (35,38–42), but mixed results from empirical studies have given rise to controversy as to whether concurrency increases HIV/STI transmission compared to scenarios including the same number of partnerships that occur serially rather than simultaneously (41, 43–47).

While a number of studies have documented the increased vulnerability to HIV and other STIs faced by Mexican and Central American migrants and their partners (35), epidemiologic evidence has not consistently linked the mobility of these groups to increased numbers of sexual partners, or to increases in sexual concurrency. Ethnographic literature suggests that historically, having concurrent or even polygamous partnerships was commonplace among Garífuna men, though infidelity was not universally accepted by community members or primary female partners themselves (17,48,49). In contrast, social norms consistently proscribed women having more than one sexual partner at a given time (17,48). Recent mixed methods studies conducted with Garífuna men and women in Honduras suggest that that having multiple or concurrent sexual partners is prevalent among both sexes, though these practices remain more socially permissible (17) or even encouraged (50) among men. In a random sample of 530 Garífuna men and women surveyed in Belize in 2007, 59% of men and 33% of women reported having two or more sexual partners in the last 30 days (51), in contrast to 9% of adults reporting multiple partners in the last year within the general population (52,53). Whether mobility is linked to sexual partnership patterns, including concurrency, has not been systematically assessed in a large sample of the Garífuna population. Accurately characterizing the relationship between migration and sexual risk behavior not only illuminates the social context which shapes HIV/STI vulnerability for this population, but can help guide public health programmers in identifying points along existing pathways of risk at which prevention and outreach efforts may be most needed. Using data from a national HIV/STI biological and behavioral surveillance survey conducted in Honduras, we aim to assess the relationship between temporary migration and having multiple sexual partnerships or concurrent partnerships among Garífuna men and women.

Research Methods

Study Design and Population

Data were collected from September to December 2012 through the second wave of a surveillance survey of the sexual behavior and HIV/STI prevalence in vulnerable populations in Honduras. The survey was implemented using a population-based multi-stage stratified cluster probability sample of Garífuna men and women. The 2001 national census indicated that 84% of the total Garífuna population of Honduras resided in the departments

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of Atlántida, Colón, and Cortés. In 2012, within the 20 municipalities with the densest Garífuna populations across these departments, five urban districts and five rural communities were selected with probability proportional to size of the Garífuna population. Field staff surveyed households in the ten selected areas to identify and locate individuals who were at least 18 years old and who self-identified as Garífuna. Households were entered into the study sampling frame if they had at least one Garífuna man or woman residing there; probability of selection into the sample was proportional to the number of eligible Garífuna adults within the household.

The study was designed to enroll 800 participants; the proposed sample size was designated based on the desired statistical power of being able to detect a 5% change in HIV prevalence and a 10% change in key behavioral indicators. The sampling frames for men and women were constructed separately; the greater number of women in the proposed sample (465 women, versus 335 men) reflected the imbalanced gender ratio among Garífuna-identifying adults captured in the census. Participants were chosen through simple random sampling within selected households, with a maximum of one male and one female participant per household.

Field staff visited the household of selected individuals to invite them to participate. If the selected individual was not available, the study staff obtained permission from other household residents to make up to three additional visits to recruit the individual. If the selected individual was not available or refused to participate, field staff approached the next household to the right that had at least one Garífuna person residing there of the same gender as the original recruit. Willing and eligible individuals were given a written invitation to visit the closest study site and complete the related study procedures.

Data Collection Procedures

Data collection occurred at seven public health centers, each located near the community or district from which individuals were recruited. At these clinical sites, study staff administered informed consent forms and obtained participant signatures prior to the initiation of study procedures. In a private area, trained interviewers administered a standardized survey on an electronic tablet or on paper if technical difficulties arose. The survey covered subject demographics, HIV knowledge and attitudes, history of HIV testing, drug and alcohol use, and a detailed history of sexual behavior and recent sexual partnerships. After administering the introductory section, interviewers provided participants with sufficient literacy the option to self-administer the survey, aside from the section covering sexual concurrency, which was administered by the interviewer. Interviewers provided instructions on how to use the electronic tablets, and remained in the same private area with the participant as they completed the questionnaire to address any questions or concerns. All surveys were administered in Spanish. At the end of the study visit, participants were given a card for mobile phone credit and a purse or shoulder bag, valued at ∼$4 USD total. All study procedures were approved by the Biomedical Research Ethics Committee of the National Autonomous University of Honduras and reviewed and approved by the Centers for Disease Control and Prevention in Atlanta, Georgia, and the analyses

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described here were approved by the Office of Human Research Ethics at the University of North Carolina at Chapel Hill.

Measures

A number of survey items captured details regarding the recent migration history of participants and their partners. Participants were asked how much time they spent outside their current city or community of residence in the last 12 months. Participants who reported having a partner who had worked elsewhere were also asked how much time that partner had spent outside the city or community where the respondent resided in the last 12 months. Individuals were defined as having migrated if they spent more than one month outside their community of residence in the last 12 months. This measure was specific to a substantial length of time away from home that allowed for repeated or prolonged exposure to other sexual partners, regardless of whether that migration was employment-related. Participants were defined as having migrant partners if they reported having a partner in the last 12 months who spent more than one month away from the community where the respondent resided. Additional information on where participants and their partners worked and traveled within and outside of Honduras was also collected.

Key outcomes were: 1) multiple sexual partnerships and 2) concurrent sexual partnerships in the last 12 months. Participants were asked to report their total number of sexual partners in the last 12 months, and were reminded that this count could include stable, casual, and commercial partners. Participants reporting two or more sexual partners in the last 12 months were defined as having multiple sexual partnerships.

To assess the presence of concurrent sexual partnerships, participants were asked to provide detailed profiles of their last three sexual partners within the last 12 months, including the dates of first and last sex. Interviewers were required to administer this section of the survey to maximize data quality, and received detailed training in concurrency assessment prior to the initiation of data collection. When necessary, interviewers facilitated participants' recall of the start and end dates of sexual relationships through prompting when these occurred relative to important dates on their personal or social calendar, such as birthdays or holidays. Participants were defined as having concurrent partnerships if, based on these dates, there was temporal overlap between two or more of the three most recent sexual partnerships within the last year. While UNAIDS recommends assessing the presence of temporal overlap of partnerships six months prior to the interview date (54), we adapted the measure by using the date of interview as the reference point in order to maximize participant comprehension and recall. Our definition was conservative, such that participants with two or more sexual partners in the last year were defined as not having concurrent partnerships if a temporal overlap between two or more recent partners could not definitively be established due to incomplete or missing data.

Analysis

As we hypothesized that migration experiences, partnership patterns, and their association may differ between men and women, all analyses were conducted separately by gender. Descriptive statistics regarding population demographics, migration history, and recent

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sexual partnership characteristics are presented as raw counts accompanied by proportions weighted to reflect the individual probability of inclusion in the sample, based on the clustered and stratified sampling design and the likelihood of non-response across the entire study population. A number of demographic and behavioral variables were evaluated for their potential to confound the association between migration and having 1) multiple or 2) concurrent sexual partnerships, including age, urban residence, marital status, education, current employment status, income, presence of economic dependents, age at first sex, and experience of forced or transactional sex. We compared the sociodemographic profile, exposure and outcome frequencies, and the distribution of recent sexual partnership indicators of men and women in our sample, and used the design-based Pearson's chi-squared test statistic to assess whether significant differences existed.

Univariate, bivariate, and multivariable binomial regression analyses were conducted using Stata *svy* commands to adjust parameter estimates and standard errors to account for the sampling design, with the primary sampling unit defined as the community or district from which the participant was selected, and with each sampling unit grouped into either the urban or rural stratum. Probability weights were constructed by multiplying the inverse of the total individual probability of selection by the non-response factor based on the fraction of the expected sample who participated. Potential confounders were included in full multivariable models if they were significantly associated (at the level of $p \leq 0.10$) with multiple sexual partnerships or concurrent partnerships, respectively. In order to maximize the precision of effect estimates, covariates were dropped from the regression model if doing so did not result in more than a ten percent change in the main effect estimate or increase the standard error corresponding to that estimate.

Sensitivity analyses were conducted to determine the effect of missing values for participants' concurrency status; we produced bounds on the estimated prevalence of concurrency and association between migration and concurrency by redefining participants with indeterminate concurrency status either all non-concurrent (minimum prevalence bound) or all concurrent (maximum prevalence bound). All analyses were conducted using Stata version 12.1 (55).

Results

Of the 800 individuals selected to participate in the survey, 647 provided informed consent. We analyzed data from the 629 individuals (230 men and 399 women) whose completed survey responses were available. The mean age of survey participants was 36.0 years old (range 18-78). The overall age distribution was similar among men and women, though a higher proportion of men were under age 25 (Table I). Forty-three percent of the population was rural, and roughly half (52.2%) had received education beyond primary school. Men were significantly more likely to be employed than women (73.1% vs. 42.2%), and had higher average monthly incomes, while women were significantly more likely to receive help with their expenses (88.0% vs. 56.9%). Women were more likely than men to be married or in a *union libre* (similar to a common-law marriage, usually implying cohabitation), and to have economic dependents, though the differences were not significant.

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All participants were Honduran-born, and over 98% were recruited and surveyed in the city or community they considered to be their permanent residence. Migration experience in the last year was substantial, and as expected, differed by gender (Table II). Nearly 30% of men and 20% of women had spent any time away from their home city or community in the last 12 months. Among all men, 27.9% had worked outside their home city/community in the last 12 months, with 13.7% having worked outside their home department. Fifteen percent of all men spent more than one month outside their home community in the last 12 months. Men who migrated were more likely to be married (63.1% vs. 46.2%), less likely to be currently employed (61.2% vs. 74.1%), and were younger at sexual debut compared to men who did not migrate (14.7 years old vs. 15.5 years old). A smaller proportion of women were migrants (8.5%).

Compared to men, fewer women worked outside their home city/community (14.4%) or in a different department (5.4%) in the last 12 months. The most common destinations to migrate for work among both men and women were San Pedro Sula and La Ceiba -- the second and third largest cities in Honduras, respectively -- and the smaller coastal cities of Trujillo and Tela. Less than two percent of men and one percent of women worked outside of Honduras in the previous 12 months, though greater proportions of both men (9.7%) and women (4.5%) had spent some time outside the country during that period. Women were significantly more likely than men to have migrant partners; 12.4% of women had partners who spent more than one month away in the last 12 months, compared to only 2.4% of men. Among the sociodemographic and behavioral variables investigated, only age emerged as a significant correlate of migration among women; 37.6% of migrant women were 18-24 years old, compared to 22.4% of non-migrant women.

Men reported a greater number of sexual partners in the last year compared to women (mean 2.2 vs. 0.9) (Table II). Men were also more likely to report having sexual partners outside their home community (19.6% among all men vs. 11.2% among all women). Only six respondents from the entire sample (<1%) reported providing or receiving money for sex in the last year. Men were more than four times as likely to have had multiple sexual partnerships in the last 12 months, compared to women (31.7% vs. 6.2%). In an adjusted binomial regression model (Table III), men who spent more than one month away from home had an increased likelihood of multiple sexual partnerships in the last 12 months (APR 1.7, 95% CI 1.2-2.4). Multiple sexual partnerships were more likely among men aged 18-34 and men who were not currently married or in a *union libre* (APRs 1.6, 95% CI 0.9-2.9; and 2.0, 95% CI 1.0-4.0, respectively), and were less likely among men who were older at sexual debut (APR 0.6, 95% CI 0.5-0.7).

Migrant women were more likely to have multiple sexual partners in the last 12 months than non-migrant women, though precision was poor and the association was not significant (APR 3.0, 95% CI 0.7-12.4). Having multiple sexual partnerships was significantly less likely among women who were 18 or older at sexual debut (APR 0.3, 95% CI 0.1-0.7), compared to women who were younger than 18 at sexual debut.

Among the 106 respondents who reported having at least two partnerships in the last year, only 80 provided sufficient information to determine whether they had concurrent

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partnerships. Thus, bounds were applied to the estimates of concurrency by defining all those with indefinite status as non-concurrent (minimum bound) or concurrent (maximum bound) as described above. Among those with complete information, 18.0% of men reported concurrent sexual partnerships (bounds 16.5-24.8%). In contrast, only 2.9% of women had concurrent sexual partnerships (bounds 2.9-5.1%). In both unadjusted and adjusted models, migrant men had a higher prevalence of sexual concurrency in the last year compared to non-migrant men (APR 1.6, 95% CI 0.7-3.5), though precision was low for this association (Table IV). In adjusted models, the only major correlates of sexual concurrency were having less education (APR 0.6, 95% CI 0.3, 0.9) and sexual debut at age 17 or later (APR 0.3, 95% CI 0.2-0.7). The main effect estimates and corresponding confidence intervals for the association between migration and concurrency were minimally altered when the minimum and maximum prevalence bounds of concurrency were used as described above (adjusted prevalence ratios ranged from 1.4-1.5).

Concurrency was also more prevalent among migrant women, though the low incidence of the outcome resulted in very low precision for the estimated prevalence ratio (APR 3.7, 95% CI 0.7, 20.7) (Table IV). The effect estimate was also sensitive to defining missing outcomes as either concurrent or non-concurrent, as the corresponding adjusted prevalence ratios for having migrated ranged from 2.8 (95% CI 0.4-18.9) to 3.7 (0.7-19.6), respectively. In the final model omitting observations missing concurrency values, younger age (18-24 years old) was associated with an increased probability of concurrency (APR 3.3, 95% CI 1.3-8.2).

Initially, we sought to investigate whether within-partnership migration (migration of either an individual or their partner) was associated with multiple sexual partnerships or concurrency. However, only five men reporting having a partner who spent more than one month away from home, limiting our ability to investigate the effect of partners' migration on men's practice of concurrency. Among women who reported having at least one partner in the last 12 months, those with migrant partners were less likely to have multiple sexual partners themselves, relative to women whose partners did not migrate (APR 0.2, 95% CI 0.0-1.8). Thus, we did not combine partner's migration history with individual migration history as a single exposure variable, as they had opposing effects on the probability of having multiple sexual partnerships among women. There were no women with migrant partners who reported having concurrent partnerships themselves.

Discussion

In a population-based sample of Garífuna adults, we found that, among men, temporary migration was significantly associated with having multiple sexual partnerships. These findings are consistent with qualitative studies of the Garífuna in Honduras, in which male migration has been linked to the acquisition of new sexual partners (12–14). However, the evidence is less compelling for the association between temporary migration and concurrency, which was less prevalent than expected. It is possible that in this context, migration more meaningfully impacts sexual partnership patterns by increasing the likelihood of partnership dissolution and the number of serial partnerships, rather than through facilitating concurrent partnerships. Prior research conducted among Mexican men

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and Puerto Rican women indicates that extensive time in the United States is associated with union dissolution (56,57), but less is known about the impact of shorter-term internal migration on marital and non-marital partnerships in Central America.

Among women, there was a strong association between temporary migration and having multiple sexual partnerships in the last 12 months, though the corresponding confidence interval was wide and included the null. In recent studies conducted in sub-Saharan Africa, female migrants were similarly shown to have a significantly higher number of lifetime partners (58) and recent partners (59) relative to non-migrants. In our sample, the magnitude of association between temporary migration and having multiple sexual partners was even larger among women than among men (APR 3.0, 95% CI 0.7-12.4 vs. APR 1.7, 95% CI 1.2-2.4, respectively), though the difference in estimates was not statistically significant. Still, the impact of women's mobility on sexual behavior merits further inquiry (59,60). HIV/STI vulnerability among migrant women in Latin America is primarily described in relation to their increased likelihood to engage in transactional sex, to experience sexual violence, and to becoming victims of sexual trafficking (35). Recent sex work and recent experiences of forced sex were rare in this sample, and were not associated with recent migration. Prior literature has described the social spaces that both migrant and non-migrant Latino men access to meet sexual partners (25,26,61), but has not provided sufficient characterization of the social environments and types of venues in which migrant women in Central America meet consensual, non-commercial partners. Additional research in this area may enhance the effectiveness of both surveillance and intervention efforts (62). Our findings did not support the notion that women with migrant partners were more likely to have multiple partners, as has been suggested in previous research within the Garífuna community (13). Women with migrant partners may be monitored by peers and family members during their partner's absence, as has been reported elsewhere in the region (32,63), thus limiting the opportunity to form new partnerships.

The prevalence of multiple sexual partnerships declined among both Garífuna men and women of Honduras. In the 2006 wave of this surveillance study, 56.6% of men and 44.0% of women reported having two or more partners in the last year (9), compared to 31.7% of men and 6.2% of women in 2012. Evidence is limited that can account for this substantial decrease in observed prevalence, but evaluations of recent HIV prevention programming implemented within Garífuna communities suggest that these campaigns have resulted in considerable increases in HIV-related knowledge and rates of HIV testing (50,64). Indeed, accurate knowledge of modes of HIV transmission was higher among Garífuna men and women than among non-Garífuna men and women sampled in the 2011-2012 Honduras Demographic and Health Survey (DHS) (65). Among youth, increases in perceived risk of HIV acquisition and modest attitudinal changes acknowledging the benefits of sexual fidelity have also been observed (50,64). Thus, it is possible that increased HIV awareness has contributed to a reduction in sexual partners.

Still, multiple sexual partnerships were more prevalent in our sample of Garífuna adults than in the general Honduran population residing in the three departments where our study was conducted (occurring among 16.2-20.7% of men and 1.2-2.9% of women) (66). We did not find strong evidence to suggest that concurrency is more prevalent within the Garífuna

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population than in the Honduran population at large. Nationally, 11% of men aged 15-49 reported concurrent partnerships in the last 12 months (66), which is within the confidence bounds of the estimate obtained in our sample among men in the same age group (21.1%, 95% CI 8.6-33.7%). The incidence of concurrent partnerships among women in the national survey (<1%) and women in our sample aged 15-49 was also similar (3.1%, 95% CI 0.6-5.6%). Thus, differences in sexual concurrency rates between Garífuna and non-Garífuna men and women may not significantly contribute to the persistent disparities in HIV prevalence observed in Honduras.

A number of limitations may have affected the validity and generalizability of our results. Research involving mobile populations necessarily involves methodological challenges. We acknowledge the potential for selection bias in our study; migrants are less likely to be captured in household surveys and therefore less likely to participate than non-migrants. In particular, men who migrate internationally may have been underrepresented, as 9% of women reported having partners who had worked outside Honduras in the last 12 months, while less than 2% of men surveyed reported recent international employment. If migrating across borders is accompanied by longer absences from home, increased feelings of social isolation, and/or slackening of social controls that promote new partner acquisition, then undersampling international migrants may have led to an underestimate in the prevalence of multiple and concurrent sexual partnerships. We also acknowledge the potential for differential reporting bias by gender regarding the number of recent partnerships and presence of concurrent partnerships (i.e., overreporting by men, and underreporting by women), which has been described elsewhere (67–69). These data are inherently subject to the limitations of participant self-report, but systematic underreporting of sexual partnerships was less expected in this population given the heightened cultural acceptability of communicating openly about sexual behavior (17,70). However, commercial sexual partnerships may have been underreported due to the persistent stigma attached to providing or receiving sex for money. Our sensitivity analysis suggests that the missing data regarding concurrency among women with multiple sexual partners may have led to an overestimate of the prevalence ratio associated with migration.

The cross-sectional design of the study does not allow us to confirm that migration preceded the acquisition of sexual partnerships. However, having partners outside one's home community was significantly associated with multiple sexual partnerships in the last year among both men and women, suggesting that the experience of migration and the exposure to new environments and sexual networks may indeed be an important driver of this behavior. Our modest sample size also constrained our power to assess whether specific destinations or trajectories (rural-urban, urban-urban) modified the relationship between migration and sexual partnerships/concurrency.

Independent of concurrency, multiple partnerships constitute a risk factor for acquiring HIV and other STIs. Serial partnerships with short gaps between them may result in biologic, if not behavioral concurrency, since a recently-infected person may expose a new partner to HIV/STI while transmission probabilities are highest (71). Given the historically high rates of HIV and other STIs within the Honduran Garífuna population, the high frequency of multiple partnerships may play a crucial role in the course of these epidemics.

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This study contributes to the body of evidence linking migration to increased HIV/STI-related risk behavior in Latin America, but few such studies have been conducted within representative population-based samples of men and women. A forthcoming study from this group will explore whether migration and recent sexual partnership characteristics are associated with current HIV/STI status. Future research focused on HIV/STI vulnerability in Latin America should continue to incorporate measures of short- and long-term mobility within and beyond national borders.

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Table I

Demographic and behavioral characteristics by sex in a population-based sample of Garífuna adults in Honduras, 2012

	Total		Men		Women		
Variable	**N**	**%***	**N**	**%**	**N**	**%**	**p-value****
Age (mean)	**629**	36.0	**230**	36.5	**399**	35.8	
Gender							
Female	399	63.6	0	0.0	399	100.0	0.52
Male	230	36.4	230	100.0	0	0.0	
Age group							
18-24	162	26.0	68	30.3	94	23.5	0.05
25-34	208	32.3	69	27.9	140	34.9	
35-44	102	15.8	27	11.5	75	18.3	
45-54	72	11.3	29	13.4	43	10.0	
55+	85	14.6	38	16.9	47	13.4	
Residence (by interview site)							
Rural	237	43.3	90	43.8	147	43.1	0.88
Non-Rural	392	56.7	140	56.2	252	56.9	
Current relationship status							
Married/Union Libre	354	54.4	119	49.2	235	57.4	0.23
Single, Separated, Divorced, or Widowed	275	45.6	111	50.7	164	42.6	
Education							
Primary school or less	285	47.8	116	50.8	169	46.0	0.43
More than primary school	344	52.2	114	49.2	230	54.0	
Employment status							
Employed	334	53.5	169	73.1	165	42.2	<0.01
Not Employed	292	46.5	60	26.9	232	57.8	
Missing	3		1		2		
Monthly income among employed (mean, in Lempiras)	333	4,422	168	5,262	165	3,599	0.05
Any dependents							
Yes	498	79.0	171	74.3	327	81.8	0.27
No	117	21.0	56	25.7	61	18.2	

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Variable	Total N	Total %*	Men N	Men %	Women N	Women %	p-value**
Missing	14		3		11		
Receives help with expenses							
Yes	483	76.7	132	56.9	351	88.0	<0.01
No	146	23.3	98	43.1	48	12.0	

*All percents weighted

**Reflects difference between weighted proportions among men versus women

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Table II

Recent migration and sexual partnership characteristics by sex in a population-based sample of Garífuna adults in Honduras, 2012

Variable	Men		Women		
	N	%*	N	%	p-value**
	230		**399**		
12-month Migration History					
Spent any time away					
Yes	70	28.8	90	19.4	0.05
No	159	71.2	309	80.6	
Missing	1				
Spent more than one month away					
Yes	37	15.0	39	8.5	0.03
No	192	85.0	360	91.5	
Missing	1				
Worked outside home city/community					
Yes	70	27.9	63	14.4	<0.01
No	160	72.1	336	85.6	
Had partner who spent any time away					
Yes	7	3.6	79	19.5	<0.01
No	198	85.1	242	62.8	
No Partner in last 12 months	23	11.3	74	17.7	
Missing	2		4		
Had partner who spent more than one month away					
Yes	5	2.4	48	12.4	<0.01
No	200	86.2	273	69.9	
No Partner in last 12 months	23	11.3	74	17.7	
Missing	2		4		
Had partner who worked outside city/ community*					
Yes	9	4.3	103	25.9	<0.01
No	196	84.4	216	56.2	
No Partner in last 12 months	23	11.3	74	17.9	

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Variable	Men N	Men %*	Women N	Women %	p-value**
Missing	2		6		
12-month sexual partnership history					
Mean number of sexual partners		2.2		0.9	<0.01
Multiple sexual partnerships	78	31.7	28	6.2	<0.01
Concurrent sexual partnerships	39	18.0	11	2.9	<0.01
Multiple sexual partnerships in last 30 days	39	17.4	11	2.0	<0.01
Expect to have future sexual relations with 2+ recent partners	21	11.6	4	1.3	<0.01

*All percents weighted

**Reflects difference between weighted proportions among men versus women

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Table III

Multiple sexual partnerships in last 12 months by recent migration history among men and women in a population-based sample of Garífuna adults in Honduras, 2012

Men	<2 partners (weighted %)	≥2 partners (weighted %)	Crude Prevalence Ratio (95% CI)	p-value	Adjusted Prevalence Ratio (95% CI)	p-value
Migration	56.0	44.0	1.5 (1.1, 2.0)	0.02	1.7 (1.2, 2.4)	0.01
No migration (Ref)	70.2	29.8	1			
Covariates						
Age 18-34	57.4	42.6	2.6 (1.4, 4.7)	<0.01	1.6 (0.9, 2.9)	0.08
Age 35+ (Ref)	83.5	16.5	1			
Primary education or less	81.4	18.6	0.4 (0.3. 0.7)	<0.01	0.7 (0.4, 1.1)	0.08
Beyond primary education (Ref)	54.7	45.3	1			
Not currently married or in union libre	56.3	43.7	2.3 (1.5, 3.5)	<0.01	2.0 (1.0, 4.0)	0.04
Married or in union libre (Ref)	80.6	19.4	1			
Age at first sex 17+	78.7	21.3	0.6 (0.3, 0.9)	0.02	0.6 (0.5, 0.7)	<0.01
Age at first sex <17	61.2	38.4	1			
WOMEN						
Migration	80.9	19.1	3.8 (0.9, 15.5)	0.06	3.0 (0.7, 12.4)	0.08
No migration (Ref)	95.0	5.0	1			
Covariates						
Age 18-24	84.7	15.3	4.5 (1.5, 13.2)	0.01	1.8 (0.9, 3.6)	0.10
Age 25+ (Ref)	96.6	3.4	1			
Primary education or less	96.8	3.2	0.4 (0.2, 0.9)	0.03	0.3 (0.1,1.0)	0.05
Beyond primary education (Ref)	91.2	8.7	1			
Age at first sex 18+	97.8	2.2	0.2 (0.1, 0.7)	0.01	0.3 (0.1, 0.7)	0.01
Age at first sex <18 (Ref)	90.8	9.2	1			

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Table IV

Concurrent sexual partnerships in last 12 months by recent migration history among men and women in a population-based sample of Garífuna adults in Honduras, 2012

Men	No concurrent partners (weighted %)	Concurrent partners (weighted %)	Crude Prevalence Ratio (95% CI)	p-value	Adjusted Prevalence Ratio (95% CI)	p-value
Migration	72.8	27.2	1.6 (0.7, 3.9)	0.22	1.6 (0.7, 3.5)	0.25
No migration (Ref)	83.5	16.5	1			
Covariates						
Age 18-24	73.6	26.4	1.8 (1.1, 3.1)	0.18	1.5 (0.9, 2.4)	0.13
Age 25+	85.5	14.5	1			
Primary education or less	88.8	11.2	0.4 (0.3, 0.7)	<0.01	0.6 (0.3, 0.9)	0.03
Beyond primary education (Ref)	74.3	25.7	1			
Age at first sex 17+	92.9	7.1	0.3 (0.1, 0.6)	<0.01	0.3 (0.2, 0.7)	<0.01
Age at first sex <17 (Ref)	74.9	25.1	1			
WOMEN						
Migration	87.1	12.9	6.4 (1.0, 38.8)	0.05	3.7 (0.7, 20.7)	0.12
No migration (Ref)	98.0	2.0	1			
Covariates						
Age 18-24	91.6	8.4	6.3 (2.0, 20.0)	<0.01	3.3 (1.3, 8.2)	0.02
Age 25+ (Ref)	98.7	1.3	1			
Age at first sex 18+	99.0	1.0	0.3 (0.0, 2.9)	0.23	0.4 (0.3, 5.4)	0.43
Age at first sex <18 (Ref)	96.0	4.0	1			